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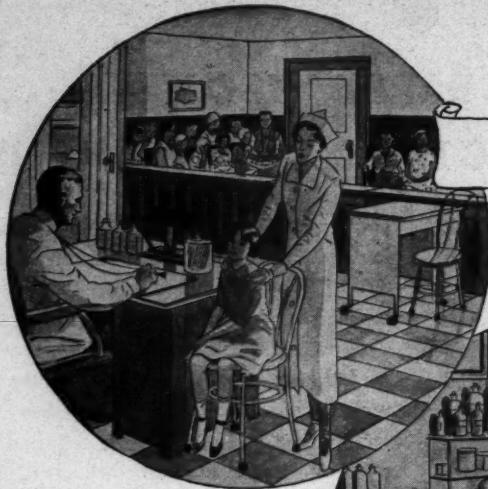
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(1) *The Art of Preserving*, M. Appert, Black, Parry and Kingbury, London, 1811.

(2) *Thermal Process Time for Canned Foods*, C. O. Ball, Natl. Res. Council Bulletin, v. 7 No. 87, 1923

(3) *Preventive Medicine and Hygiene*, M. J. Rosenau, Appleton-Century, N. Y. 6th Ed. 1927.

This is the third in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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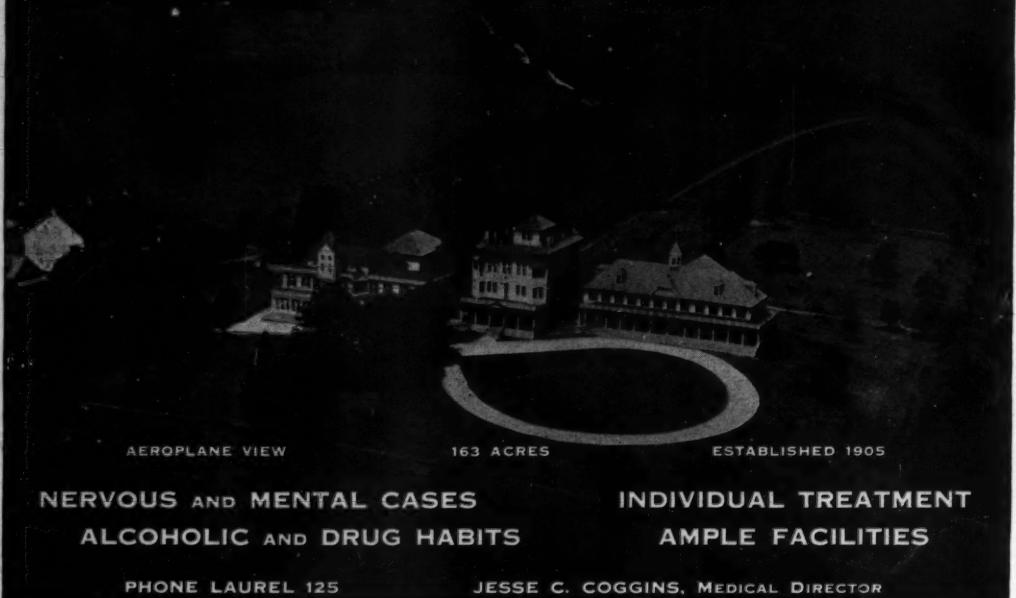
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SHRINKAGE OF THE TURBINATES

EFFECTED BY
BENZEDRINE INHALER
IN THE TREATMENT OF
HAY FEVER



FIG. (i) 3:02 P.M. Before Treatment

CASE No. 1 (B.C.) Female. Colored. Acute hay fever. Seen at Nose and Throat Clinic of a Philadelphia hospital, May 28, 1934. The inferior turbinates were badly engorged and there was considerable lacrimation as seen in Fig. (i). Following four inhalations (two in each nostril) from Benzedrine Inhaler, the turbinates were shrunk as in Fig. (ii) and there was relief from lacrimation.



FIG. (ii) 3:07 P.M. After using Benzedrine Inhaler

These pictures were made by William B. McNett from actual cases seen at the Nose and Throat Clinic of a large Philadelphia hospital. They illustrate strikingly the beneficial effects obtained by inhalation from Benzedrine Inhaler during an acute attack of Hay Fever. They also confirm previous publications as to the value of Benzedrine in this condition.

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wise benefited." *Bertolet, Medical Journal & Record, July 20, 1932.*

... results in hay fever "were definitely encouraging. There was definite proof, in this type of case, that the amount of secretion was diminished, the subjective itching and feeling of fullness relieved and decongestion of the mucous membrane accomplished." *Byrne, New England Journal of Medicine, Nov. 23, 1933.*



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FIG. (i) 2:20 P.M. Before Treatment



FIG. (ii) 2:35 P.M. After using Benzedrine Inhaler

CASE No. 2. (M.S.) Female. White. Acute hay fever. Seen May 28, 1934 at the Nose and Throat Clinic of a Philadelphia hospital. 2:20 P.M.—Turbinates dry and engorged. Two inhalations from Benzedrine Inhaler. 2:22 P.M.—Turbinates moist and dripping—some shrinkage. 2:35 P.M.—Maximum shrinkage and complete symptomatic relief. Small spur visible on turbinate.

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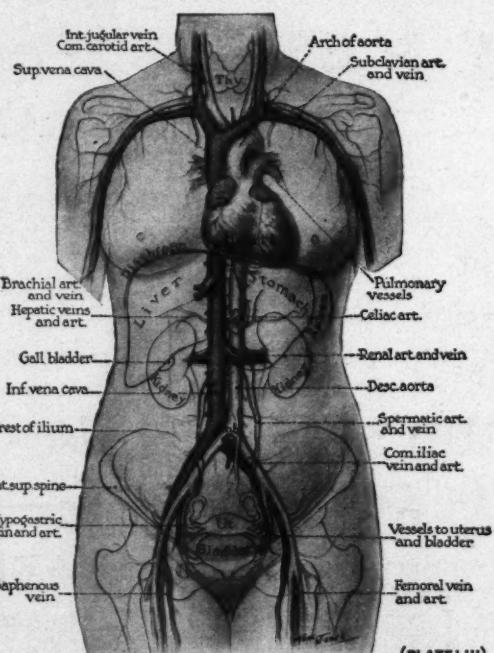
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DELAWARE IN FIGURES

ARTHUR C. JOST, M. D.*

Dover, Del.

Vital statistics, we are told, is the book-keeping of life and death. And so it is, but only within limits, since, if the impression conveyed by the statement is that in respect of any community or place a health balance sheet may be prepared comparable to that of any business organization which records its monetary transactions meticulously, one is due for many disappointments. It is true that there are certain well-known indices which are often used in the endeavor to measure the success or the reverse which a community has met in its efforts at health improvement. The general death rate, the infant mortality rate, and the tuberculosis death rate are perhaps the ones most universally accepted as indicative of the standing of any community in the health scale. But the general death rate depends to a very great extent on the age composition of the community; the infant mortality rate is accurate only if registration is accurate, and the tuberculosis death rate may be swollen to excessive figures for the very reason that the community has enjoyed the reputation of being a place where pulmonary diseases can be treated to best advantages.

Moreover, the fleeting nature of the product, life, which a vital statistics department attempts to record or trace differs vastly from that which is the medium through which a business organization functions. Our bank vaults are said even now to contain gold mined when history was young, but the tabulations of the vital statistician must record incidents respecting those who under no circumstances can long remain members of the society of which he or she is for a time a part.

So the vital statistician is a bookkeeper only within limitations which may make experimentation on a living being different from the experimentation on dead matter in a test tube.

If the above is true of any one community it can be understood that when several communities are compared or examined as to the relation there might be between their statistical records, difficulties—often insurmountable difficulties—may be immediately met. Here at once and assuredly comparisons may be odious. There are vast differences in the conditions under which statistics are gathered. There may be active disagreement in respect of the definitions of terms. Diseases rampant and deadly in one locality may be relatively mild and innocuous in another, so, before any conclusions are arrived at, much should be known and appreciated respecting the conditions affecting the localities to be compared. Only then are any conclusions of value, and only then should any dogmatic statement be made.

With this introduction an examination may be made of the vital statistics of the state in an endeavor to ascertain the value of the public health work which has for some years been carried on. That there is a connection between the work done—especially the preventive work—and the standing obtained seems definitely and affirmatively arguable. The proof appears quite positive, for example, that, had not our children been immunized as largely as they have been against diphtheria, our losses from that disease would have been higher. Had there not been carried on a very active campaign intended to result in the provision of more beds for the tuberculous and for the early recognition of cases of the disease it seems reasonable to assume that more of our population might have

*Executive Secretary, Delaware State Board of Health.

died from tuberculosis. Had there not been initiated very active measures intended to make safe our potable water supplies and to remove the possibility of human consumption of milk and other foods capable of encouraging or actually causing disease, it is reasonable to assume that diarrheas and other dirt diseases, especially typhoid fever, would not have so lessened in frequency. Undoubtedly there must be some improvements which, as it were, came as by-products of far-reaching social or community changes, so that by no means can it be said in respect of all that planned and considered action must be given credit. But he is a courageous individual who would predicate that there has been no connection between effort and result.

The published reports of the Census Bureau of the United States furnish the information on which most of the figures given herewith are based. There is not available from that source, however, complete figures for the year 1934, so it is necessary to use figures published for the year 1933. If 1934 figures are used they have been taken from local sources. The tabulations available give the figures for all the states of the Union, sorted out and classified in accordance with the same procedure (though the original methods of collection may have differed vastly) and are probably much more acceptable for the study than would be the figures obtained from the individual states themselves.

One statement can immediately be made, that in respect of certain groups of diseases the death losses in the state of Delaware rather closely approximate the rates of loss of the Registration Area as a whole, while in respect of others the Delaware death losses are very definitely higher. All rates given are per 100,000 of population.

DEATH RATES 1933

	Delaware	U. S. Reg. Area
Typhoid Fever	3.7	3.5
Diphtheria	2.9	3.9
Scarlet Fever	.8	2.0
Measles	.4	2.2
Whooping Cough	2.5	3.6
Tuberculosis (all forms)	74.7	59.5
Poliomyelitis	.4	.6
Cerebro Spinal Meningitis	1.2	1.2
Influenza	17.0	26.4
Tetanus	.4	1.0

With the exception of tuberculosis, the showing is very fair; and, with but two ex-

ceptions in the entire list, the losses in Delaware are under those which were experienced in the United States as a whole. It might be said that if the figures are taken as they are prepared locally, the showing of the state is even better than here appears.

TYPHOID FEVER

Over a period of years the improvement in Delaware has closely approximated the improvement observed in the United States as a whole.

Year	Delaware (Delaware Figures)	U. S. Reg. Area (Census Bureau Figures)
1925	10.4	8.0
1926	6.0	6.5
1927	4.3	5.5
1928	8.0	4.9
1929	2.1	4.2
1930	7.6	4.8
1931	4.6	4.5
1932	1.2	3.6
1933	3.3	3.5

TUBERCULOSIS

All Forms

There has been very much improvement indeed in respect of this disease during the past twenty or more years. It is but to be expected that the regularity of improvement which the larger unit shows is not likely to be duplicated in the smaller one, though the trend of improvement is actually greater in Delaware. As before, the Delaware figures are taken from Delaware sources. Where it is possible to give the figures for the white portion of our population alone, these are given.

Year	Delaware Whites only	U. S. Reg. Area White and Colored	U. S. Reg. Area White and Colored
1910		184	160
1911		171	159
1912		159	150
1913		168	148
1914		183	147
1915		195	146
1916		200	142
1917		181	147
1918		183	150
1919	125	161	126
1920	117	144	114
1921	108	137	99
1922	85	118	96
1923	87	114	93
1924	88	116	90
1925	74	104	87
1926	85	109	87
1927	70	96	81
1928	64	82	79
1929	66	82	76
1930	50	69	72
1931	65	87	68
1932	61	71	63
1933	55	73	60

In view of the very high rate of loss among the colored, being from three to six times that of the whites, a comparison of the rate of Delaware, having about fourteen per cent of colored population, with the Registration Area population in which are fewer than ten per cent of colored, can only be made to the disadvantage of the state.

DIPHTHERIA

The rates of loss over a period of years are as given below:

Year	Delaware	U. S. Reg. Area
1920	12.5	15.3
1921	5.8	17.6
1922	8.4	14.6
1923	12.3	12.
1924	9.6	9.3
1925	13.0	7.8
1926	6.5	7.5
1927	5.6	7.8
1928	3.8	7.2
1929	5.9	6.6
1930	8.4	4.9
1931	7.1	4.8
1932	5.0	4.5
1933	2.9	3.9
1934	1.7	

The series is too short to show what is described as a periodicity, with about six or seven years between peaks, in the figures of the smaller unit. In the larger unit, composed as it is of a large number of states in which local periodicities may overlap, the tendency towards periodicity, if indeed it exists, is entirely obscured.

INFANT MORTALITY

In respect of the rate of infant losses the passing years have brought many well-marked changes. It should be remembered in connection with these that accuracy of birth reporting is of very great importance. Moreover, due to the large percentage of colored population, the entire southeastern portion of the United States has never been able to show rates as favorable as have other geographical divisions of the Registration Area. Of recent years, Delaware's position has greatly improved. It is doubtful if any state of the Union can show greater improvement during the past ten years than can this state. Even as late as 1930, the Delaware rate was one of the very highest ones of all the states. In 1933 there were eighteen states with higher rates and the same relative position was held in 1934. It is now within measurable distance of being the same as the rate for the entire

area. In the latter year, New Mexico, Arizona, South Carolina, Georgia, North Carolina, Tennessee, Virginia, Colorado, Maine, Maryland, Louisiana, Florida, West Virginia, Mississippi, District of Columbia, Alabama, Kentucky and Missouri all had rates higher than Delaware's.

These are the favorable conditions. The unfavorable ones may be more briefly summed up in the statement that the crude or uncorrected general death rate of the state is one of the highest of all the states of which the Area is composed. In the year 1933 it was exceeded only by the rates experienced in the District of Columbia, Maine, New Hampshire, and New Mexico.

OTHER DISEASES

The rates of loss from lobar pneumonia and chronic nephritis were the highest of all the states composing the Area. Only two states, Maine and New Hampshire, had higher losses from cerebral hemorrhage. Only two, the District of Columbia and New Hampshire, lost more from diseases of the heart. (The Delaware rate was 345 per hundred thousand, whereas the rate for the Registration Area was but 206.) Only two states, Rhode Island and New York, had greater losses from diabetes. It was the eleventh in respect of cancer losses, the states losing more from that disease than Delaware being New Hampshire, District of Columbia, Massachusetts, Maine, Rhode Island, New York, Vermont, Connecticut, Oregon and California. In losses from accidental deaths, the Delaware loss was exceeded only by the rates experienced in Nevada, Wyoming, Arizona and Montana. Delaware lost 90 per hundred thousand, whereas the Registration Area rate was but 72.

Nor can it be said that that this is but the experience of but a single year. Undoubtedly there is a trend for this condition to perpetuate itself. Undoubtedly, as improvements are being made in respect of those conditions which take toll of our population in the early age groups we are moving towards still higher rates in respect of those diseases which affect more especially those of the higher age groups. The changes can be shown most graphically if there are grouped in two

classes, "A" and "B", the diseases of the two types. The "A" diseases of this tabulation are tuberculosis, typhoid fever, diphtheria, whooping cough, measles, and diarrhea under two years, the latter being here included because of the effect which it has on the infant mortality rate. In the "B" diseases are cancer, cerebral hemorrhage, chronic nephritis, diabetes, heart disease, and accidental deaths.

"A" AND "B" DISEASES

Year	"A"		"B"	
	Combined rate per 100,000 of population	Per cent of total yearly deaths	Combined rate per 100,000 of population	Per cent of total yearly deaths
1916	353	20	640	36
1917	396	21	673	37
1918	390	14	650	27
1919	267	16	593	37
1920	260	18	585	39
1921	236	20	600	44
1922	205	15	257	41
1923	212	15	625	43
1924	180	13	649	48
1925	188	15	680	49
1926	182	12	740	49
1927	136	10	704	54
1928	134	9	740	54
1929	132	9	690	51
1930	125	9	750	55
1931	138	10	736	53
1932	100	7	734	55
1933	95	7	692	50

The calculated trend of the "A" disease drops from 343 to 72; that of the "B" disease rises from 654 to 688.

What amounts to another view of the same phenomenon is provided by an examination of the two sets of figures which represent the average age of the individual dying in the state (the average age at death) and the age on either side of which half the deaths take place (the median age of death). Both these figures have increased quite noticeably during recent years, as will be seen from the following tabulation.

DELAWARE

Year	Average age at death	Median age of death
1921	44.44	50.6
1922	45.91	53
1923	44.85	51.6
1924	46.77	53.2
1925	47.66	54.2
1926	48.64	55.5
1927	50.28	57
1928	50.66	57.7
1929	49.77	56
1930	51.54	59
1931	51.38	59
1932	53.76	60.2
1933	54.9	61.5
1934	54.9	61

The median age for the whites was 63.4 in 1934; for the colored only 49.7. It is interesting to know that in 1893 the average age at death was only 32.74 and that the median age was as low as 26.

WILMINGTON

The city of Wilmington has participated in these changes in common with the rest of the state. Particularly, the rate of loss of infant lives has been lowered, till according to the figures of the American Child Health Association in 1933 the Wilmington rate was below the average of 985 American cities in the Registration Area. (55 as opposed to 57.1) On the other hand, the general death rate is higher than the average rate of other cities. A table which has been prepared shows the Wilmington rates in comparison with those of the cities, Philadelphia, and Baltimore.

	Philadelphia		Baltimore		Wilmington	
	General Death Rate	Infant Mortality Rate	General Death Rate	Infant Mortality Rate	General Death Rate	Infant Mortality Rate
1929	13.05	62	14.41	73	13.5	75
1930	12.56	64	13.93	65	14.4	71
1931	12.82	64	14.16	74	13.9	70
1932	12.02	52	13.13	62	13.0	62
1933	12.01	49	13.05	61	13.9	55

Not only are the Wilmington rates higher than those of the two cities named, but it will be seen that they are higher than the majority of the other cities of the United States which approach it in population, and that this has been the case for some years.

GENERAL DEATH RATES

U. S. CITIES COMPARABLE IN SIZE TO WILMINGTON, DELAWARE

City	State	Population 1930 Census	General Death Rates				
			1929	1930	1931	1932	1933
Waterbury	Conn.	99,902	10.5	10.6	10.6	10.3	9.6
Miami	Fla.	110,637	9.5	11.1	11.4	11.6	11.2
Tampa	Fla.	101,161	11.6	11.5	11.2	11.3	12.0
Peoria	Ill.	104,969	13.2	12.3	12.3	11.1	11.1
Evansville	Ind.	102,249	12.6	12.6	11.3	10.7	11.2
Fort Wayne	Ind.	114,946	11.7	11.0	10.9	10.1	10.1
Gary	Ind.	100,426	10.2	9.6	9.6	8.0	8.7
South Bend	Ind.	104,185	10.2	9.1	8.1	7.7	8.0
Wichita	Kan.	111,110	12.4	11.9	9.7	9.9	9.7
Cambridge	Mass.	113,643	12.8	11.8	11.8	12.1	12.4
Fall River	Mass.	115,274	13.2	11.5	11.0	11.4	13.6
Lowell	Mass.	100,234	13.6	13.1	12.9	12.9	13.2
Lynn	Mass.	102,320	11.8	10.3	9.3	10.1	10.1
New Bedford	Mass.	112,597	11.9	11.0	12.0	11.0	11.8
Somerville	Mass.	103,908	9.2	9.7	8.2	8.8	9.5
Duluth	Minn.	101,463	11.8	11.7	11.2	11.3	10.5
Elizabeth	N. J.	114,589	10.9	10.4	10.6	10.4	9.7
Utica	N. Y.	101,740	16.6	14.8	15.0	14.9	12.4
Canton	Ohio	104,906	11.1	9.7	9.9	9.4	9.3
Reading	Pa.	111,171	11.8	11.1	11.4	11.9	11.0
Knoxville	Tenn.	105,802	13.3	14.1	12.7	12.3	12.3
El Paso	Texas	102,421	—	—	—	14.0	14.1
Tacoma	Wash.	106,817	12.2	12.8	12.7	12.8	13.3

In a city of about 100,000 population, one point difference in the death rate means about

100 deaths per year. Thus a rate of about 14 means about 1400 deaths while one of 8 means about 800 deaths.

It is possible that some of the relatively bad showing is due to the difficulty of determining accurately the population of the city, but undoubtedly it cannot all be due to that cause. If the figure which has been chosen as representing most accurately the population estimate is lower than the number of persons actually residing in the city, the computed figure of the general death rate which has been given is incorrect, being higher than the actual figure. The number of deaths has been corrected for those whose deaths occurred in the city but whose residences were in other communities, so that error due to that cause has been prevented. It is very evident that both the city and the state are contending against conditions participated in by both communities and that these conditions have been affecting the rate quite adversely.

One of the unfavorable conditions is the age composition of the population of both, and the unusual preponderance in their populations of persons of the higher age groups who are subject to higher death rates than are persons of younger ages. The census returns of the year 1930 show this quite conclusively, and show, moreover, that the condition was more marked in that year than it was in the year 1920, when also a census was taken. In the United States as a whole in 1930 the percentage of persons aged 45 years and over was 22.8. In Delaware, the per cent was over 26. There were but 9 states which had a population distribution so unfavorable. These states included several on the Pacific Coast whose general salubrity and evenness of climate had caused them to be chosen as places of retirement by many individuals desirous of spending the remainder of their lives under conditions more pleasant than they were where their competencies had been amassed. Another group of states showing the same adverse distribution were the oldest New England States, emigration from which had sadly depleted the native-born stock and which the immigrant, seeking employment in industries other than agricultural, had passed by. Delaware is thus grouped with Maine, Massachusetts, Vermont and New Hampshire, all

of which show death rates which reflect an unfavorable population composition. A method has been devised of standardizing a death rate in order to make provision for conditions such as are here represented, there being obtained by calculation a figure less than unity if the population composition be adverse and greater than unity if a more favorable condition is present. This figure or "factor of correction" when multiplied by the crude death rate results in a figure in which unusual population composition is nullified. The factor of correction in respect of Delaware as against the population of the United States as a whole is the decimal .9.

A second unfavorable condition is the presence in the state of a high per cent of the colored. There have been years during which the number of colored deaths has exceeded the number of births, though each rate has exceeded 20 per thousand of population. If, however, the same distribution persisted in recent years as was present during the year the census was taken, the statistics of the state outside of Wilmington are adversely affected to an extent much greater than is Wilmington itself. During the census year there was in Wilmington approximately one colored person to each eight whites. In the state outside of Wilmington the proportions were about two to eleven.

COMMENTS

What observations are we justified in making in connection with these conditions? It would first appear that the time is approaching when more preventive work must be undertaken against the many diseases which have heretofore not been considered as coming within the field of a health department's interest. The attack on communicable disease has met with a measurable degree of success. The other group of diseases have in the interval been taking an increased toll. It is not to be expected that the same machinery of attack can suffice, nor can the same spectacular reductions be brought about. But deaths can be further postponed to an extent well worth the attempt. Particularly it should be possible to lessen the number of deaths from pneumonia. Accidental deaths alone in 1933 numbered almost as many victims as did six of the commonest communicable diseases.

Surely, something can be done to prevent these losses, especially in view of the ages of the majority of those dying. Who has yet proved to us that cancer is entirely beyond control? It is well-known how many of these cases come under observation too late for successful treatment. But could not something of very great value be achieved if it could be brought about that early application for relief were the rule rather than the exception?

This is of special importance in the state since it is deaths from this class of diseases which is doing so much towards making the Delaware general death rate so high. But all the indications are that this condition will soon affect many if not all the others, though for the present Delaware and several of the northern states most give evidence of being affected. Health departments and the medical profession, whose instruments health departments are, should prepare themselves for the change of front.

This extension of work should be undertaken both in the city of Wilmington and in the rural areas. It should not be forgotten that the facilities which a city usually can offer are such that city records should better the records of the rural portions of the state. Thus the rates of the city of New York are more favorable than are the rates of the remainder of the state, just as the rates which the city of Detroit presents are lower than are those of the remainder of Michigan. It would appear that the rate of the city of Wilmington should be more favorable than those of the remainder of Delaware. The city of Wilmington should prepare itself with such a health equipment as would make the attainment of this position possible.

THE DIPHTHERIA CONTROL PROGRAM

C. A. SARGENT, M. D., C. P. H.*
Dover, Del.

The diphtheria immunization program was started in Delaware in March 1926. Since that time we have been attempting to determine the efficiency of the prophylactic inoculations. As indicated by the mortality rates, the results had not been as good as antici-

pated, until the past two years, even though a relatively large per cent of the population had been given the protective treatments. In 1930 and 1931 the mortality and morbidity rates were so high that statistical, epidemiological and laboratory studies were undertaken which have been continued up to the present time.

Diphtheria immunization clinics have been conducted in the schools of the state every year since 1926 and clinics for the immunization of pre-school children have been conducted once a week or once a month in the various health centers. The per cent of the population given the protective treatments by age groups and years is as follows:

Year	Age				
	0-4	5-9	10-14	15 and over	Total population
1926	.9%	12.1%	10.1%	.2%	2.4%
1927	3.0%	28.9%	31.0%	.86%	6.9%
1928	5.2%	38.6%	49.0%	1.4%	10.4%
1929	6.2%	44.3%	64.0%	2.2%	13.1%
1930	10.0%	44.6%	75.0%	3.5%	15.4%
1931	16.0%	47.2%	82.0%	5.1%	18.1%
1932	19.4%	47.0%	83.0%	7.3%	20.0%
1933	22.4%	47.5%	79.0%	8.9%	22.0%
1934	29.0%	61.0%	79.0%	12.0%	25.0%

The above figures indicate only those given one complete series of preventive treatments. The total number in this group is 62,043. In addition there are 5,867 individuals who have received more than one complete series of treatments, 4,559 who have received an incomplete series followed later by a complete series and 1,363 who have received only the incomplete series of treatments.

Among the 62,043 individuals given one complete series of treatments there have been eighty-four cases of clinical diphtheria confirmed by laboratory diagnosis. This number of cases among the treated groups seems rather large, yet when the attack rates among the treated and untreated groups are considered, the attack rate of the treated group is significantly lower than that of the untreated group as may be seen in the following table:

DIPHTHERIA ATTACK-RATE OF THE TREATED AND UNTREATED GROUPS

Age	(per 1,000 population)			
	1927-1928		1928-1929	
	Treated	Treated	Not Treated	Not Treated
0-4		1.78	0-4	1.73
5-9	.06	2.44	5-9	.29

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10-14	.24	.57	10-14	.54	.66
15-19	.32	.57	15-19	.20	.74
Total	.16	1.33	Total	.36	1.52
1929-1930			1930-1931		
	Not			Not	
Age	Treated	Treated	Age	Treated	Treated
0-4		2.27	0-4		3.21
5-9	.37	3.23	5-9	.24	4.24
10-14	.30	2.07	10-14	.22	4.29
15-19	.17	.67	15-19	.13	1.15
Total	.28	2.02	Total	.19	3.02
1931-1932			1932-1933		
	Not			Not	
Age	Treated	Treated	Age	Treated	Treated
0-4		2.65	0-4	.56	2.03
5-9	.53	4.63	5-9	.94	2.33
10-14	.30	4.02	10-14	.23	1.83
15-19	.41	1.21	15-19	.44	.81
Total	.36	2.91	Total	.51	1.77
1933-1934				Not	
			Age	Treated	Treated
			0-4	.62	1.83
			5-9	.42	2.03
			10-14	.20	.85
			15-19	.20	.69
Total		.31	Total		1.42

It will be noted that the attack-rate is significantly lower for all age groups of the treated population. Although immunization has not produced the results anticipated when the work was first started, it appears to be effective enough to be considered as one of the major factors in the control of diphtheria.

As immunizing agents we have used toxin-antitoxin with horse serum, toxin-antitoxin with sheep serum, toxin-antitoxin with goat serum, toxoid and alum precipitated toxoid. Attempts are being made to determine the effectiveness of the various preparations. Two very interesting facts have been presented. First: There have been no cases of diphtheria reported among those who have had more than one complete series of treatments nor among those who have had an incomplete series followed by a complete series of treatments. There have been eighty-four cases among those having had only one complete series and twenty cases among those having had only the incomplete series of treatments. Second: nine per cent of the complete treatments were of toxin-antitoxin with goat serum whereas twenty-nine per cent of the cases among those having received only one complete series of treatments were in this group.

We have been unable to determine the duration of immunity after treatment. It has

been our experience that urban children will remain Schick negative over a longer period of time than will rural children; however, our original sample has now become so small that definite conclusions cannot be drawn. We have had a few instances similar to the following which have led us to believe that too much dependence should not be placed upon one negative Schick reaction. A white boy eight years of age received the third toxin-antitoxin inoculation in January 1927. In October 1929 the Schick reaction was negative. On January 13, 1933 he developed clinical diphtheria, which diagnosis was confirmed by laboratory test. The Schick reaction may be correct at the time but, if the immunity is not of long duration, the degree of protection from time to time can only be determined by repeated Schick tests or by the determination of the antitoxin content of the blood by laboratory test. Since we do not know the duration of immunity and because there have been no cases reported among those having received more than one complete series of treatments, we have not discouraged the duplication of treatments, especially among the younger age groups. We have records of individuals who have received as many as five complete series of treatments.

Fairly accurate mortality records are available since 1910. The mortality rate has gradually been reduced since 1931 to 1.6 per 100,000 population in 1934, which is the lowest mortality rate for diphtheria of which we have any record. Diphtheria prevalence and high mortality tend to occur in cycles of about three to five years. Based upon the past records there should have been an upward trend of the rates in 1934 at least. Even granting that we may now be in the low portion of the diphtheria cycle, the length of the cycle is being extended at least. The morbidity and mortality rates for the first five months of 1935 have been the lowest for any similar period of which we have records.

We have not used alum precipitated toxoid over a long enough period of time to determine its efficiency. Of the twenty cases reported during the first five months of 1935, three had received alum precipitated toxoid in 1934. The total number given the toxoid in 1934 was 8,576. One very disagreeable fea-

ture in the use of alum precipitated toxoid has been, in our experience, the formation of abscesses. Prior to its use we had had no abscesses reported among those treated. Since using it, however, we have had approximately one abscess in each 1500 children treated.

It has been our experience that an attack of diphtheria does not always produce lasting immunity. One case may be mentioned as an illustration. A female, white woman, aged 24 years had clinical diphtheria in January 1929, and again in March 1934. The clinical diagnosis was confirmed in both instances by laboratory tests. Our series is not large enough from which to draw definite conclusions, however, there are indications that an attack of diphtheria produces more lasting immunity than the preventive treatments.

Wherein the results of immunization have not been all that was expected when the work was started, it is our opinion that immunization is the major factor in the control of diphtheria, and that good epidemiological work and immunization will do much to control the disease.

LABORATORY COMMENTS

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DIPHTHERIA

For the diagnosis or determination of the carrier state of diphtheria, Loeffler's blood-serum culture tubes, which have been inoculated with the exudate from throat or nose, are incubated at body temperature from 6 to 24 hours and are examined for diphtheria-like organisms. Those cultures showing diphtheria-like organisms are typed to determine whether they belong to the *gravis*, *intermediate*, or *mitis* group. All cultures for release are incubated at least 24 hours. Results when requested, are telephoned or telegraphed to the physician at his expense. Not all diphtheria-like organisms produce toxin: some are harmless. A virulence test is made on every culture showing diphtheria-like organisms.

PNEUMONIA

This laboratory is prepared to type pneumococci. The Krumweide and Valentine, and Neurfeld methods are used. These methods require less than 2 hours. For these tests, sputum should be submitted in a container

which does not contain a disinfectant or preservative.

TYPHOID AND PARATYPHOID

Blood to be examined by agglutination tests for typhoid and paratyphoid fevers should be submitted in the Keidel tube. The serum is used for agglutination tests for typhoid, paratyphoid "A" and "B", and undulant fever, and at times for typhus. The clot is cultured for typhoid and paratyphoid bacilli. During the past year we have isolated the bacilli in a large number of those specimens giving positive agglutination tests and in a few which gave negative agglutination tests.

During the first week of the patient's illness the best laboratory test is a culture of the patient's blood for typhoid and paratyphoid bacilli. When the bacilli are found the diagnosis is certain. After the first week the bacilli may be absent from the peripheral circulation. At this time the best laboratory test is the agglutination test. As the blood from patients suffering from paratyphoid fever, undulant fever, colon infection, and other febrile diseases occasionally give weak reactions with typhoid bacilli, sufficient blood should be submitted to make accurate dilutions for different examinations.

A positive reaction in dilution of 1:80 or higher, if accompanied by clinical evidence, is practically diagnostic of typhoid. Twenty per cent of all typhoid cases give positive reactions by the end of the first week, about 70 per cent by the end of the second week, and more than 90 per cent some time during the disease. A few do not give positive reactions at any time. Usually the reaction may be obtained for some time after the fever subsides.

UNDULANT FEVER

Undulant fever is seldom recognized clinically. The agglutination test is probably the most valuable aid in the diagnosis of the disease, as early and late cases may react too weakly to be completely dependable. When a sufficient quantity of blood is submitted for the agglutination test for typhoid, the agglutination test for undulant fever is also made. Blood for the agglutination test for undulant fever should not be collected until two weeks from the onset of the disease. It should be collected in a Keidel tube. The technic used

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by this laboratory is essentially the same as that used in the National Institute of Health Laboratory in Washington.

TYPHUS AND SPOTTED FEVER

The agglutination test for typhus and spotted fever is known as the Weil-Felix test, and is a valuable aid in diagnosis. Two or more specimens of blood, as in typhoid, are desirable. This test depends upon the agglutination of blood serum upon certain strains of the proteus group (*Proteus X19*). This proteus-like bacillus—is found associated with typhus and spotted fever but is not the cause of the disease.

GONOCOCCUS COMPLEMENT FIXATION TEST

The gonococcus complement fixation test is not as sensitive as the complement fixation test for syphilis for the very simple reason that only a small amount of the antibody is produced when the disease is limited to circumscribed and superficial area in simple urethritis. Furthermore, time is required for antibody production. For these reasons the reaction is rarely positive during the first two weeks of acute urethritis of either sex, and bacteriological examination of smears and cultures constitute the best means for a laboratory diagnosis. The earliest positive reactions in acute gonorrhreal urethritis of males (first attack) which Kolmer observed have been during the fourth week, and all have had prostatic urethral infections with probably early involvement of the prostate gland. He did not observe any positive reactions in mild infection presumably limited to the anterior urethra.

In chronic urethro-prostatitis of males with and without acute exacerbations, chronic cervicitis and salpingo-ovaritis of adults, chronic vaginitis, and cervicitis of children, and especially in arthritis, iritis, and endocarditis, the reaction is frequently positive and of great value in diagnosis. In these bacteriological diagnosis are very frequently impossible.

In acute infections smears may be expected to disclose the presence of gonococcus in about 60 per cent of the cases. In chronic infection but 15 to 40 per cent show the organisms in

smears and cultures: the complement fixation test is therefore superior to the bacteriological examination in the diagnosis of subacute and chronic gonorrhea of women.

The gonococcus complement fixation test is of little or no value in the diagnosis of acute gonococcus infections of either sex. A negative reaction does not always exclude the disease in chronic infections. According to Kolmer the test possesses considerable practical value when properly conducted in the following conditions:

(1) In the diagnosis of acute complications of gonorrhea, and of acute exacerbations of chronic urethro-prostatitis.

(2) In the detection of latent foci of gonococcus infection in epididymis, prostate, etc. of men in the absence of discharge. A positive reaction is acceptable as evidence of residual infection which may be rendered active and infectious by many different factors.

(3) As one test for the cure of a gonococcus infection and especially of those previously yielding positive reactions. Just how much time is required for the disappearance of antibody after the eradication of infection cannot be stated and doubtless varies a great deal. Tests yielding persistently positive reactions at intervals of two months are almost surely the result of residual infections, and from 20 to 50 per cent of individuals clinically well and free of discharge may continue to yield positive reactions for varying periods of time, and some indefinitely. In this connection it must be remembered that the administration of gonococcus vaccine and antigenococcus serum may be responsible for positive reaction; but these are ordinarily eliminated within 6 or 8 weeks after the last dose.

(4) In the diagnosis of gonococcus pelvic disease of women and in differential diagnosis from inflammatory disease of other origin, tumors, etc.

(5) In the diagnosis of gonococcus arthritis, iritis, and endocarditis, in which the test is particularly valuable.

COMMUNITY SANITATION AND DELAWARE'S OPPORTUNITY

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Dover, Del.

Whatever one may think about the economics of the New Deal and of the program fostered by many men now in public life who pay very little attention to party labels, one must admit on looking over the many projects that have been consummated in the various states throughout the Union that certainly the general tone of the living conditions of hundreds of thousands of people in this country has been raised considerably. Certainly no more fundamental improvements could be made in community life than the provision for additional water supplies, and extensions as well as the installation of sewerage systems and sewage treatment plants. In addition to that, numerous communities have taken a broader view and have made Work Relief Projects of such things as swimming pools, playground areas, municipal golf courses, baseball diamonds, and others. To put it mildly, it is very unfortunate that the state of Delaware has not received its fair share of these improvements, especially when one considers that this state last year paid into the national treasury some seventeen million dollars in taxes, which undoubtedly is the highest contribution per capita made by any group of citizens in this country.

MANY TOWNS INCOMPLETELY SEWERED

In almost every town and city in this state there are certain areas where it does not seem likely that water lines and sewer lines will be put in for some years, due to the low economic level of these people. In order to overcome the health hazards prevalent in these areas a very great impetus has been given to the movement for the construction of sanitary privies in these unsewered areas and which comes under the general term of community

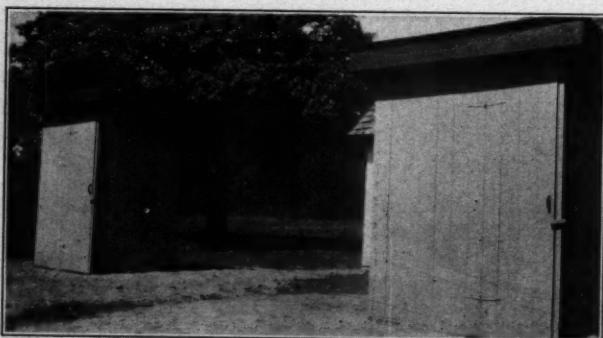


Type of privy in use at some of the one and two-room rural schools

sanitation. That this work is far reaching in effect can best be illustrated by stating that, at the present time, a project comprising thirty-four states has been tentatively approved by Mr. Harry Hopkins as a Work Relief Project. Under such a project, which is being fostered by the U. S. Public Health Service, the skilled and unskilled labor costs involved in the construction of sanitary privies is granted by the Federal Government as Work Relief Funds, with the cost of material being put up by the property owner.

COMMUNITY SANITATION HAD ITS
START IN THE SOUTH

The early beginnings of such work occurred long before the depression had arrived. North Carolina, under the able direction of Mr. E. H. Miller, Chief Engineer of the North Carolina State Board of Health, had started such a program in the battle against hookworm and other filth-borne diseases. The same Mr. Miller is now in charge of this work for



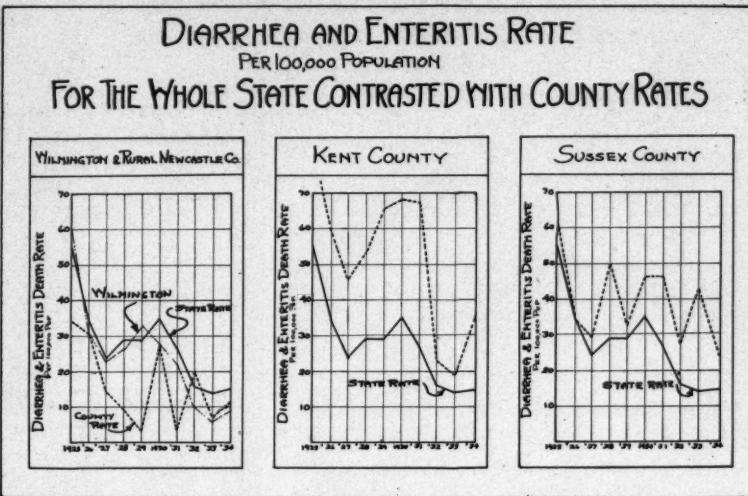
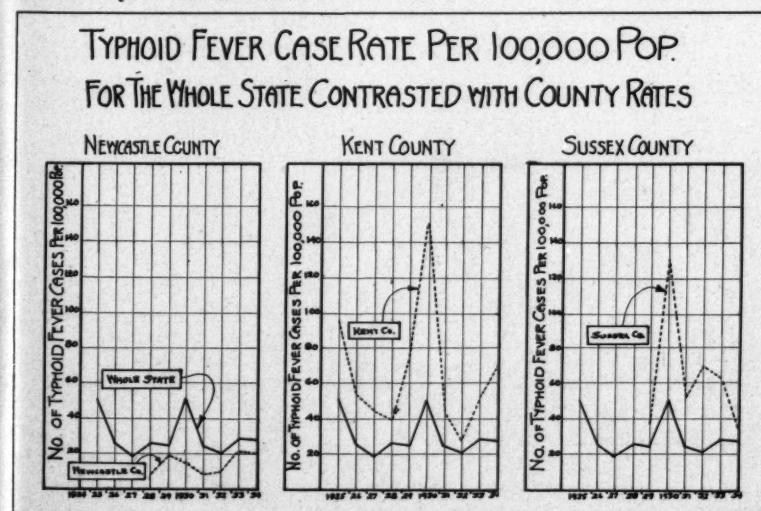
Education in cleanliness can be further advanced by such improvements

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the U. S. Public Health Service with offices in Washington. During the past two years, under funds supplied by the Federal government as Work Relief Projects, many states have put on extensive campaigns for the eradication of insanitary privies. I might cite that the state of West Virginia, with which I am quite familiar, has during the past 18 months constructed 61,000 sanitary privies all exactly alike, and has reduced the typhoid fever rate approximately one-third. Statistics as to the reduction in diarrhea and enteritis, as well as other filth-borne diseases, are not yet available. In Indiana, under the program sponsored by the U. S. Public Health Service, an application has been made for a sum totalling \$1,700,000 for this type of work.

COMMUNITY SANITATION UNDER THE C. W. A.

In Delaware some of this work was started in the winter of 1934, using C. W. A. funds, under the direction of Mr. Garrison, loaned to the State Board of Health by the U. S. Public Health Service. The work was started in the city of Dover and in the towns of



Smyrna, Georgetown, Millsboro and Milton. The first privy was constructed in Millsboro on February 5, 1934. Work was discontinued soon after, although a total of 132 had been completed and placed on the premises ready for use. Since that time, the State Board of Education has appropriated \$1500 for this work to provide sanitary facilities for the one and two-room schools, and just recently has appropriated another \$2500.

THE PRESENT PROGRAM

Lacking any setup for the securing of additional Work Relief funds, an attempt was made to interest various towns in the state to adopt a community-wide sanitation program, with the foremen in charge to have groups of laborers and carpenters reconstruct the existing privies, using what material was available from the old structure, and with the town billing the property owner for the cost of materials and labor. Most of the towns co-operating in this program put up a small revolving fund so that the low income groups could pay for the labor and materials over a period of

time. Under this program five towns in Sussex County, under the direction of Mr. Harry E. Tunnell, have begun this work. Millsboro by the first of September will be the first completely sanitized town in the state.

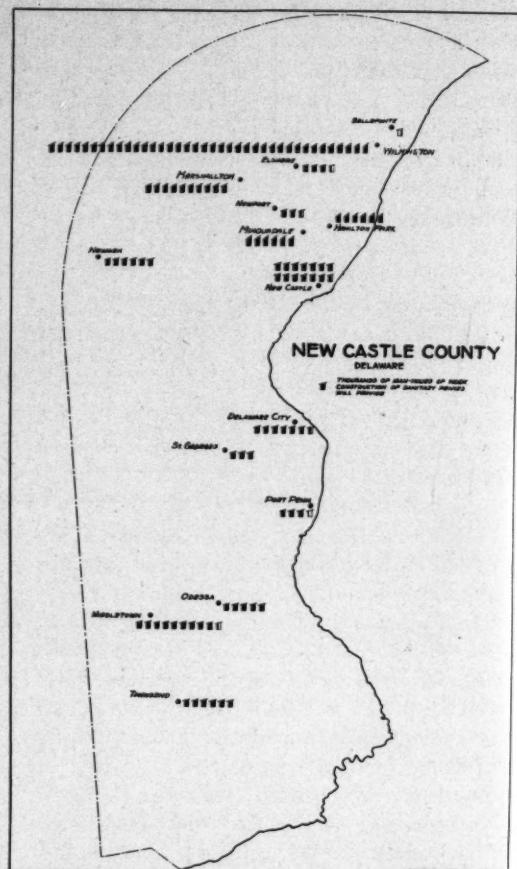
During this period sanitary surveys have been made of every incorporated town in this state, including the city of Wilmington. Maps have been prepared on which every insanitary structure has been spotted, as well as those homes that have cesspools or septic tanks. The extent of the prevalence of the insanitary type of privies is shown by the tabular form attached hereto.

In the various towns adopting this program the name of each property owner was secured and he was sent a general explanatory letter as well as a mimeographed copy showing the street layout of his town, which has spotted on it all of the insanitary structures so that the property owner would not feel that he was the only one being "picked one".

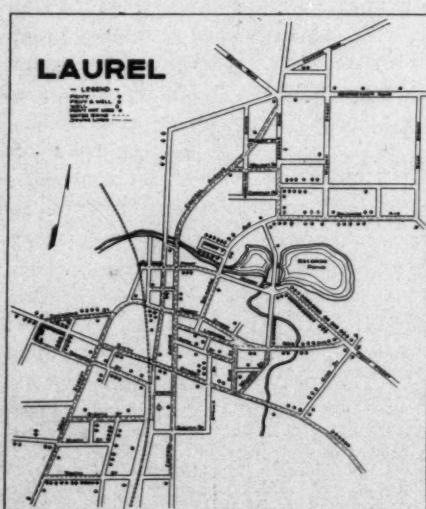
PROPOSED COMMUNITY SANITATION AND WORK

RELIEF FOR THIS STATE

Recently the State Board of Health has submitted to the Federal Government, through Mr. Bankson T. Holcomb, W. P. A. director for the state of Delaware, a Community Sanitation Project calling for the expenditure of \$312,000, approximately one-third of this to be for labor costs and two-



Each black privy denotes 1,000 man-hours of work that could be done in each town



Maps such as these have been prepared for each incorporated town. Each black dot denotes an insanitary privy

thirds for material costs, the latter to be supplied by the property owners. If such a project is approved by the state and Federal authorities it would be possible to put to work in each county 16 carpenters and 51 laborers for a period of one year. This would enable us to sanitize practically all of the incorporated towns within the state.*

IMPORTANCE OF THE PROPER DISPOSAL OF HUMAN WASTES

The importance of the proper disposal of human excreta is manifest when we know its relationship to filth-borne diseases such as typhoid fever, diarrhea, and enteritis. In addition to the filth-borne diseases, there is very good evidence that a community sanitation program carried on a state-wide basis

(*New Castle County project approved by President August 14, 1935.)

will mean also the lowering of the pneumonia and tuberculosis rate. This presumably is due to the fact that certain body discharges associated with these diseases are also properly taken care of. This, at least, has been the experience in other areas.

With respect to the typhoid fever rates and the diarrhea and enteritis rates prevailing in the three counties the charts show very clearly that the rural areas have a considerably higher case rate than the state average which of course is undoubtedly compensated for by the city of Wilmington with its large population and sewage facilities. While the city of Wilmington has any number of insanitary privies the proportion is not as great as prevails in the smaller incorporated communities.

WHAT IS A SANITARY PRIVY

The sanitary privy as advocated by the U. S. Public Health Service, and an illustration of which is shown, consists merely of a pit in the ground four feet square and four feet deep and boarded up to prevent it from caving in, with the curbing raised somewhat above the natural ground level, with the excavated earth tamped around the outside of the curbing. The sanitary unit, which consists of the concrete floor, concrete riser, self-closing seat covers and a screened ventilator, are all placed on this mounded earth, a sill being provided for a resting place. The house itself is then bolted down to the concrete flooring through four metal prongs provided for that purpose. The contrast in the appearance of this type of privy, as compared with the common type immortalized by Chie Sales and others, is well illustrated in the accompanying photographs which show conditions as they existed at one of our one-room schools before and after improvements had been made.

The average cost of materials for a complete new structure is approximately \$22.00, with labor both skilled and unskilled averaging about \$18.00, making the total cost approximately \$40.00.

THE CASE OF SEWERS VERSUS SANITARY PRIVIES

The question often comes up, "Would it not be more advisable to spend this money on the construction of sewers?" The twenty-two dollars expended for materials undoubtedly would be a factor towards finance-

ing the cost of sewers; but on the other hand, many property owners do not have running water nor the necessary toilet fixtures. Furthermore, a good many towns are not interested in providing sewers for such areas. The usual statement on the part of the town authorities is that we will do this within two or three years time, but actual experiences show that in the meantime five or ten years pass and certain groups of our population grow up without decent sanitary facilities. It is for this reason that such a community sanitation program carries considerable weight with public health authorities.

INSANITARY PRIVIES IN DELAWARE NEW CASTLE COUNTY

Incorporated		
Town	Population	No. of Privies
Bellefonte	761	9
Elsmere	1,204	90
Delaware City	1,005	125
Middletown	1,242	278
New Castle	4,131	275
Newark	3,889	150
Newport	947	68
Odessa	373	75
Port Penn	250	40
St. Georges	265	40
Townsend	421	70
Wilmington	104,941	929
	119,439	2,149

Unincorporated

Hamilton Park	140
Minquadale	137
Marshallton	224
501	

Kent County

Bowers	245	60
Camden-Wyoming	1,048	250
Clayton	824	34
Dover	4,773	305
Felton	463	145
Frederica	589	212
Milford	3,716	568
Smyrna	1,957	175
	13,615	1,749

Sussex County

Blades	466	85
Bridgeville	987	60
Delmar	838	85
Frankford	450	152
Georgetown	1,755	470
Greenwood	527	130
Laurel	2,277	296
Lewes	1,890	171
Millsboro	479	165
Milton	1,130	116
Seaford	2,468	388
Selbyville	661	137
Rehoboth	795	125
	14,723	2,380

**A SURVEY OF THE RESULTS OF
ARTIFICIAL PNEUMOTHORACES ON
ONE HUNDRED THIRTY-TWO CASES**

L. D. PHILLIPS, M. D.*
Marshallton, Del.

A brief history of the development of artificial pneumothorax for the treatment of pulmonary tuberculosis reveals that James Carson, an English physician, suggested that the most rational treatment of pulmonary tuberculosis would be the collapse of the affected lung. So convinced was he of its possibilities that in 1822 he induced two patients to submit to this operation. An incision was made in the chest wall to admit the passage of air. The usual sound heard when such an opening is made was not audible in either case and it was suspected that pleural adhesions existed which prevented collapse of the lung. Carson's practical suggestion was then forgotten for many years.

In his book of diseases of the chest, published in 1837, the keen clinical observer William Stokes, has this to say: "The proper symptoms of phthisis are in many cases arrested, and singularly modified, by the occurrence of the new disease (pneumothorax). I have often found that after the first violent symptoms had subsided, the hectic ceased, the phthisical expression disappeared, the flesh and strength returned; and in this way the patient has enjoyed many months of comfortable existence, and was only disturbed by dyspnea and the sound of fluctuation on exercise." In his book on Diseases of the Lungs, published in 1860, Walter Hayle Walshe says: "In some recorded cases of actively advancing phthisis, the first sufferings of accidental perforation having passed, it has certainly appeared, though the signs of hydro-pneumothorax remained, that the phthisical symptoms themselves underwent improvement. But an occurrence so rare gives no warranty for the fanciful proposal to treat phthisis by producing artificial pneumothorax."

This shows clearly that the method was suggested in England long before Forlanini had done it in Italy. During the course of the nineteenth century many other physicians

reported experiences similar to those of Stokes and Walshe just quoted.

It was, however, C. Forlanini, of Pavia, who first induced a pneumothorax for therapeutic purposes, and reported his experiences in 1894. Independently of Forlanini, John B. Murphy, of Chicago, did the same in 1898. But for some time no attention was paid to this method of treatment until Brauer, Spengler, and others, took it up in Germany. At present, it is one of the recognized methods of treatment of certain cases of pulmonary tuberculosis. That it is a valuable method will be appreciated when it is borne in mind that it is mostly indicated in cases in which everything else has been tried and found wanting, in other words, when there is everything to gain and nothing to lose. Contrasted with other methods of treatment, which are nearly always stated to exercise their alleged curative effects only during the minimal stage of the disease, when diagnosis is often doubtful, and spontaneous cures are not uncommon, it is to be considered one of the best therapeutic procedures we have at present for the cure of phthisis.

Maurice Fishberg in his third edition of Pulmonary Tuberculosis published in 1922, states: "The proportion of cases suitable for the treatment is very small indeed. Statistics of most writers seem to indicate that less than 5% of all cases that come under their observation are suitable for this treatment. Hardly 2% of the cases that came under my observation during the past ten years could be considered suitable for pneumothorax treatment."

The percentage of cases in which artificial pneumothorax is thought advisable has been increasing each year until at present in some tuberculosis centers, 75% of all patients admitted are treated by some form of surgery, the majority being artificial pneumothorax.

Statistics here at the Sanatorium show that in 1928, 5 patients, or 5.6% of 88 admissions, submitted to this operation, while in 1934, 28 patients, or 35.3% of the 77 admissions, submitted to this operation.

The success or failure of this procedure depends almost wholly on the degree of collapse of the diseased areas. There is practically always some involvement of the collateral

*Director, Brandywine Sanatorium, Delaware State Board of Health.

lung. This involvement, if not too extensive, generally improves when the more diseased lung is put at rest; thereby arresting the positive sputum from the areas which are seeding the better lung.

The above is well borne out by the following tables:

Year	No. Patients			Collapse						
	New	Old	Total	Total	Number	Satisfactory	Unsatisfactory	Living—	Living—	Dead
				Treatments			Symptom-free	not well		
1928	5	—	5	60	1	4	1	—	4	
1929	2	2	4	58	1	1	1	1	—	1
1930	13	2	15	294	7	6	6	4	3	
1931	24	11	35	809	11	13	10	4	10	
1932	21	27	48	1086	7	14	8	8	5	
1933	39	34	73	1851	22	17	20	11	8	
1934	28	50	78	2499	14	14	14	13	1	
Total	132	126	258	6657	63	69	60	40	32	

DURATION OF TREATMENT

COLLAPSE	Number of Patients	Duration					
		Less 6 mos.	6 mos.-1 yr.	1-2 yrs.	2-3 yrs.	3-4 yrs.	
Satisfactory	63	5	11	20	8	8	5
Unsatisfactory	69	50	5	6	3	3	1
Total	132	55	16	26	11	11	6
							7

COLLAPSE	Number of Patients	Duration			Dead
		Living— Symptom-free	Living— not well	Dead	
Satisfactory	63	53	9	1	
Unsatisfactory	69	7	31	31	
Total	132	60	40	32	

CLASSIFICATION OF PATIENTS ON WHOM ARTIFICIAL PNEUMOTHORAX HAS BEEN DISCONTINUED

INACTIVE	Number of Patients	Living—		Dead
		Symptom-free	not well	
Satisfactory	10	8	1	1
Unsatisfactory	64	7	26	31
Total	74	15	27	32

A satisfactory collapse of the lung must meet all of the following requirements: collapse of all diseased areas, closure of all cavities, rendering of the sputum negative, general improvement of the patient.

By an unsatisfactory collapse one or more of the following conditions are present: diseased areas are not collapsed, cavities are not closed, persistent positive sputum, no general improvement of the patient.

Pleural adhesions may be present in either case. A satisfactory collapse was obtained in

spite of the adhesions, or the adhesions may have been the cause of an unsatisfactory collapse.

The patients on whom artificial pneumothoraces were attempted and no free pleural space found have also been included under unsatisfactory collapse. The reasons for the unsatisfactory collapse may thus be classified as follows: no free pleural space, an air pocket which apparently did not influence the diseased areas, adhesions holding open the diseased areas and cavities to a greater or less extent.

The patients classified under "living and symptom-free" have no elevation of temperature, no active complications, and meet the requirements of a satisfactory collapse.

The patients tabulated under "living and not well" have symptoms caused by their tuberculous infection such as loss of weight, night sweats, fever, fatigue, complications, (laryngeal, intestinal, etc.) and pulmonary findings as classified under unsatisfactory collapse.

Sixty-three patients have or have had a satisfactory collapse. Seven of these sixty-three patients have been re-expanded. Twenty-four are now working. Four of the seven patients living and symptom-free have had extrapleural thoracoplasties.

Artificial pneumothorax is employed only on those patients in whom it is felt that bed rest alone will not produce sufficient healing of the lesions, or in whom bed rest has been given a trial with no improvement. Following these principles, artificial pneumothorax has been used almost entirely on moderately advanced and far advanced cases with cavity formation. It is our conviction that if a satisfactory collapse is obtained, the patient has an excellent chance of recovery.

VACCINATION WITHOUT COMPELSSION

ERNEST F. SMITH, M. D.*

Dover, Del.

For a long time the impression has prevailed that there was strenuous objection to vaccination against smallpox in Delaware. On the other hand, many requests for vaccination

*Health Officer for Kent County, Delaware State Board of Health.

had been coming to the State Board of Health for years. It was, therefore, decided to offer vaccination in the schools to all children whose parents signed the following request slip:

**"Delaware State Board of Health"
Request For
Small-Pox Vaccination**

I request that
(Name of Child)
 be given protection against small-pox by vaccination.

Age Grade School
 Date

.....
(Signature of Parent or Guardian)

These request slips were left at the schools with the teacher, who gave them to the children to take home for the parents' signature. No other preliminary work was done.

The result was rather astounding. In Kent County alone, 3,384 children returned the signed request slips and were vaccinated. The school registration, exclusive of Milford, was 6,670. Milford school, because of the nearness of final examinations, and fear that reactions might interfere with them, was postponed until fall. This shows that a trifle more than 50% of the entire school population were vaccinated voluntarily at this time. We have every reason to believe that should the work be repeated during the next school year a large part of the remainder would be vaccinated.

Multiple puncture was the method used in most cases. The procedure was to wipe off the skin with cotton saturated with ether. Ether was used because it evaporated quickly and saved time. When the skin was dry, a drop of vaccine was placed on the cleansed area, a sterile needle, held at right angles between the thumb and forefinger, was placed almost parallel to the skin and 12 to 16 punctures made by downward pressure through the drop of vaccine, into the skin over an area no larger than .5 c. m. in diameter. Care was taken to go into the skin, but not through it with the point of the needle.

In the majority of cases the child was instructed to allow the sleeve to remain up until the vaccine dried. In a few cases the excess vaccine was wiped off immediately after puncture. No difference in results between the two methods was noted.

The children were given instructions not to wear any covering other than the clothing over the vaccination, and especially not to wear a tight bandage or celluloid shield. A light gauze bandage was permissible. In spite of this advice a few shields and tight dressings were in evidence on examination about one week later. In almost every case where a shield or tight dressing was worn the area of inflammation around the vaccination was greater and the crust was softer and exuded more serum. In about 500 cases (roughly 15%) the single scratch method was used with equally good results. This consisted of a single scratch not more than $\frac{1}{8}$ inch in length being made through a drop of vaccine into, but not through the skin; consequently, blood was not drawn.

The results were as follows:

3,384	Vaccinated
2,978	Primary takes
280	Immune reactions
14	Secondary takes
52	Failed to take

Sixty children were not inspected, due to absence. Of the 3,324 children whose vaccinations were inspected, 52, or 1.56% failed to take. The 52 were revaccinated, 30 of whom were inspected and found to have takes. 22 were not inspected.

The high percentage of takes was probably due to the freshness of the vaccine. The resulting scars were small, and in most cases, will be scarcely noticeable.

The only complication reported to us was a case in which impetigo was implanted on the vaccination. There was a typical impetigo crust the size of a silver half-dollar. This child also had lesions of impetigo about the face.

EDITORIAL

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SOCIAL SECURITY

Thoreau, commenting on English history about the year 1850, says that nothing of significance had taken place in that quarter during the two hundred years which had elapsed between that date and the revolution of 1649.

Will some American historian, scores of years in the future, select the year 1935 by reason of the Social Security legislation then obtained as a milestone in American history, comparable in significance to what was Thoreau's opinion of the English experience?

In a measure so comprehensive and a program affecting such a large portion of the lives of all American citizens, it is not to be expected that members of the medical profession can remain either unaffected or unconcerned. On the contrary, they must of

necessity be considered as deeply involved, since there are certain specific portions of the Act the working out of which will depend on co-operation between state and Federal health departments, all of which are administered by those members of the profession who have chosen public health as their particular specialty. The briefest synopsis of these public health provisions is sufficient to disclose the extent and the importance of those portions of the plan.

I. To the Public Health Service the allotment of a sum of \$8,000,000.00 is proposed for each fiscal year, commencing on July 1, 1935. This amount has been divided in order to provide for the attainment of several and distinct aims.

- A. Five per cent (\$400,000.00) is to be allocated for division equally among 48 states and 3 districts or territories for the purpose of strengthening and developing their administrative services. This amount does not have to be matched from state funds, having the status of a "flat grant".
- B. Fifty per cent (\$4,000,000.00) is to be matched on a per capita basis with the states, one-half from existing appropriations and one-half from appropriations which may in the future be obtained from state sources.
- C. Fifteen per cent (\$1,200,000.00) is to be used as an equalization fund to be distributed in accordance with the economic needs of the states.
- D. Fifteen per cent (\$1,200,000.00) is to be allotted for special health problems presenting themselves in states which can match from state funds the amount of Federal assistance.
- E. Fifteen per cent (\$1,200,000.00) is set aside for the Public Health Service for the purpose of the training of personnel.
- II. To the Children's Bureau an amount totalling \$3,800,000.00 is to be allotted each year to be expended specifically for the bet-

terment of Maternal and Child Health. This amount has been divided as follows:

- A. \$20,000.00 has been allotted to each state, district or territory on a matching basis.
- B. \$1,800,000.00 is to be divided among the states in proportion to the number of live births. (On this basis and from this amount, Delaware's proportion is \$3,372.95 per year.)
- C. The balance (\$980,000.00) is to be allotted according to the financial need of the state applying for assistance, as determined by the Secretary of Labor.

It has been considered that the provision of services in rural areas or in areas of unusual economic distress should be one of the first considerations of the Bureau in the allocation of all the above funds.

III. To the same Bureau will be allotted an amount, \$2,850,000.00 for the purpose of providing care for crippled children. This is to be spent entirely on a matching basis, there being first made available to each state \$20,000.00 to be matched from state funds. The balance of the grant is to be divided, still on a matching basis, among all the states.

In the welter of discussions which have taken place in favor of or in opposition to the measure, it has developed that at least two suggestive comments can be made. The first of these is that of all the provisions of the Act those provisions outlining expenditures for definitely public health activities have elicited the least amount of adverse criticism. The second is that as never before the attempt has been made to insure that the working out of the health provisions of the Act shall be effected without a repetition of the disagreements between public health departments and practicing members of the medical profession which have marred former similar programs.

There may always be health officers too militant, and practitioners too resentful of encroachment on what they consider to be their private preserves. It should be possible to restrain the one and to mollify the other to the end that the public interest be served.

DELAWARE AND THE TUBERCULOUS NEGRO

CONWELL BANTON, M. D.*

Wilmington, Del.

The writer has noted with interest the increasing space given to reports and studies of the reactions of the negro to the onset and cure of tuberculosis. The health reports of the various states and clinics are devoting separate columns to this subject, and from them many conclusions are being drawn. Some years ago the Phipps Institute made a survey of Philadelphia's negro population and this effort was followed by similar surveys in other localities. In the absence of such a survey in Delaware, a true and scientific deduction is out of the question, but the writer feels that it might not be amiss to acquaint the public with the manner in which the state of Delaware has handled this very interesting problem.

About twenty-five years ago the Delaware Anti-Tuberculosis Society established a clinic for negroes and requested a negro physician to assume charge. The attendance was large from the beginning, and showed that the negro was intensely interested in the problem as it affected him in particular. It was soon found that the main difficulty was in persuading the incipient case to accept an examination. His use of patent medicines, the advice of quacks, and the dread of the disease all had a tendency to a postponement of the necessary examination and diagnosis. It was felt that a wider education was required. To meet this need recourse was had to lectures in the various churches and schools throughout the state. These meetings were well attended without exception, and interest seemed to be aroused in the subject. Later, the National Negro Health Week was established. These "Weeks" were held annually in Wilmington for years. The writer recalls one week in which the attendance was over five hundred each night for five nights. The programs consisted of health plays, music, and a lecture by some physician whose specialty was tuberculosis. Lantern slides, moving pictures, and visiting choirs from other churches added to the program's attractiveness. As a result

*Director, Edgewood Sanitarium, Delaware State Board of Health.

of this campaign the interest in tuberculosis grew beyond expectation. Our one clinic required two nurses, and later it was found expedient to have the clinic conducted by an entirely negro staff. This change was made by the engagement of a negro nurse, and has been found to be very successful. Because of the many demands made upon this clinic by the non-tuberculous, it was deemed wise to divide the clinic. Another negro physician was engaged, and the child health clinic was established. This particular clinic also grew out of bounds, and another physician was asked to assist in this work. The interest continued and an expansion was attempted by the establishment of a pre-natal clinic. This also has been very successful. All this has happened in Wilmington alone, as such a separation has not been found practicable in lower Delaware, because the population would not justify such separate attention. While these growths were taking form the directing forces were changed and the clinics were placed under the State Board of Health, which is now in control.

The tuberculosis clinic had not been long in existence before it was found that we had a real problem on our hands. Why tell the patient he had tuberculosis and not be able to do anything for him? Why tell the public about the danger of open cases and permit the case to remain at home? The answer was simple: the state legislature granted an appropriation and Edgewood Sanitarium was established. At first it was located in a building near "Hope Farm," now Brandywine Sanatorium. There we had one nurse, an assistant, and a cook. We had six beds, which were occupied very early after we were ready to receive patients. For a while there was some opposition in the neighborhood, but this soon vanished. After a few years in these cramped quarters we moved to the present location. At first we occupied the original farmhouse, and later the present building was erected. It was designed with the thought, so prevalent at the time, of open-air treatment. Twenty beds made up the capacity. For quite a while these satisfied the demand, but later it was found necessary to add more rooms and beds. This was done by moving the nurses' quarters out of the building into

a newly constructed nurses' home. The original farm building was converted into a home for the children. At this writing Edgewood has forty beds and each one is occupied.

Each week finds a request for beds from all parts of the state. Many times the waiting list is equal to one-half of our capacity. It is not uncommon for a minimal case to become far advanced before we are in a position to receive it. In many instances we are informed that the applicant has died before it is possible to admit him. That brings us to the crux of the situation. In order to effect a cure, the negro, more than the whites, must begin his treatment early. In the present establishment every inch of space has been used. The wards have been supplied with all the beds they can properly hold, and Edgewood needs more beds.

The present economic situation will pass and be long forgotten by all but the physician. He will have his memory sharpened by an increased incidence of tuberculosis among all races. At that time the negro will supply the greatest number of victims. Tuberculosis is largely an economic disease. The home condition of the negro is often deplorable. He lives "across the railroad" and his quarters are often mere shacks. His home is crowded beyond belief, even in Wilmington, and often without any provision for sanitary care in its most elementary form. The congested condition of his daily life is conducive to the spread of the disease and no hope can be given him for its cure under these conditions. Even in good times he is "the last hired and the first fired," and that saying is doubly true in hard times. Throughout the United States he is one-fifth of the population, but draws about one-half of the relief at the present time. His wages are lower than those paid the whites for similar occupations and his rents are higher for less habitable quarters. This lamentable situation is also true in Delaware.

The only way to fight endemic disease is to stamp it out at its source. It is our practice to kill whole herds of cattle, if found to be tuberculous. This is done at a terrific cost to all concerned. We can't do this with human tuberculosis. We must do what we can to effect a cure, but the most important feature is the prevention of spread by isolation.

This too, is costly, but not so costly as to be prohibitive. Beds must be provided for the cure, and more beds provided to prevent the spread. One open case, by spreading to others in the family or neighborhood, can easily nullify all our efforts to stamp out the disease. Yes, it is expensive, but not so expensive as to neglect to do so.

Edgewood has been provided with every modern equipment for the treatment of tuberculosis. All that can be done in its present limited space is being done. That the negro is responsive to the treatment is evidenced by the lowered death rate in the past few years. True, his rate is still higher than that of the whites, but he is rapidly gaining in his fight. He no longer has to be begged to accept a bed: he asks for one. The negro does not recover as readily as the whites, and for that reason must begin his cure early in the disease. He is learning this fact, and the state must provide facilities for the increased demand. The state has been very generous, but more beds must be provided. Our forty beds must be one hundred. That will mean more nurses and a larger staff.

We find at Edgewood that racial characteristics enter into the picture. Unless some "medicine" is given the patient he feels that he is neglected. He prefers it bitter, and it must "work" him. He is impatient of bed confinement. Many times he does better out of bed. In the main he is very cheerful, but a trifle restless under restraint. A few kind words, however, find him ready and willing to co-operate in all measures for his good. It is positively astonishing how well some of the patients do with gigantic cavities. Very often such cases are without fever at any time, and absolutely without cough or symptom: only physical examination or the x-ray disclose the true condition.

We have several patients with positive Wasserman reactions. We are particularly interested in these cases. Our experience has been that they respond very well to neo-arsphenamine and the heavy metals. Our interest lies in the fact that quite often their lungs seem to clear up during the course of the antiluetic treatment. We often wonder if the luetic tuberculous does not do better than those not so afflicted. An interesting

note is sounded by the fact that we have more positive Wassermanns than at Brandywine Sanitarium, where the population is three times as large. It is our hope to prepare an article upon this feature as soon as we have had the requisite number of patients from which to draw a proper inference.

We have had but little experience with surgical tuberculosis. Our one case of thoracoplasty is making a satisfactory recovery. This operation was done by the same surgeon, who has performed the many phrenic operations we have had. The success of these procedures has convinced us that with proper selection the negro will respond to such collapse measures as readily as the whites.

Our pneumothorax cases have been many, but not of sufficient number to measure our success. We have not yet permitted an expansion. We have been doing this type of collapse for about three years and in that time have had but two refusals for that treatment. We are now doing two bilaterals, and the patients seem to be making a satisfactory improvement. We have had but two accidents during this interim. In each case we had a "split diaphragm". That they were not serious is shown by the fact that we only discovered the condition upon x-ray. The patients were not aware of the condition, nor did they suffer any pain. Recovery was not retarded in any way. The accident, in each case, was probably due to a rise of the diaphragm, as a result of a former phrenic operation. Pneumothorax is very popular at Edgewood, as shown by the fact that in many instances the patient asks for it.

Our patients also have the advantage of the clinical conferences conducted by Dr. Lawrence Phillips at Brandywine Sanitarium. At these conferences our patients, among others, come up for consideration, their cases are discussed, and treatments outlined. After an interim they are reviewed and further plans made for their treatment. In this manner our patients enjoy the wisdom of several trained minds to guide them in their quest of restored health.

In reference to tuberculosis it was said at a recent symposium on hospital provision for the negro race, "there is no movement in the entire country to do anything to alleviate this

condition." We are sure that our friends were not aware of the splendid and sustained efforts made by the Diamond State in this direction. They evidently did not know that our state conducts four clinics in Wilmington, manned by members of the negro race, that all other clinics throughout the state are open to negro patients, that the state has for over fifteen years conducted a sanatorium for the care and treatment of the tuberculous negro, and that it is conducted by an entirely negro personnel. It might be said in passing that the cost of such treatment and care is met entirely by the state.

That these attentions are appreciated is evidenced by the large attendance at these clinics, the constant request for admission to the sanitarium, and the very fine care that is taken of the equipment provided. This last phrase is worthy of amplification. Aside from its care of the patient, Edgewood is interesting to the housekeeper. It is no idle boast that Edgewood is the peer of any similar institution anywhere in its cleanliness and general sanitary upkeep. A visit to it will find it the acme of hospital hygiene.

The state of Delaware, through the State Board of Health, has accepted the challenge of the white plague. It has, through its last legislature, provided for an increase of beds at Brandywine Sanitarium, and it has established clinics at strategic points, but unless it will also provide more accommodations for its negro citizens at Edgewood the fight will be only partly won, and a partial victory is a partial defeat.

THE PREVENTION AND CONTROL OF MEASLES

FLOYD I. HUDSON, M. D.*

Rehoboth, Del.

The question arises frequently as to the possibilities of prevention and control of measles. Rubeola, or measles, is one of the most highly communicable of all infectious diseases. It may be classed in contagiousness with smallpox and influenza. The disease occurs in all parts of the world and in all races. It is common in the temperate zone and breaks out epidemically in the cool season of

the year in biennial or triennial periods. It spreads very rapidly in thickly populated areas and in institutions.

Measles ranks high as a cause of disease in children. Many deaths are attributed to this cause yearly. Rosenau states that ninety per cent of all deaths from measles are in children under five years of age. Ninety-five per cent of deaths from this disease are due to secondary infections settling in the lungs and causing pneumonia. It is estimated that ten thousand deaths take place yearly in the United States from measles.

The etiology of measles is not well understood. The incubation period is very definite, varying from nine to eleven days. For health purposes a figure of fourteen days is accepted as safe. A filterable virus has been demonstrated in cases of measles. This virus may be derived from the circulating blood or from the secretions of the nose and mouth, and is capable of reproducing the disease in man and monkeys. The fine bran-like scales which desquamate are not infective. The virus is very feeble and soon becomes non-infective when out of the host. It is easily killed by ordinary disinfectants and by a temperature of 131 degrees F. for 15 minutes. A streptococcus of the alpha type has also been described which is capable of producing a toxin specific to measles.

Measles is spread almost solely by droplet infection. Very small amounts of the infective material are necessary to cause an active case. Humans are very susceptible and have practically no immunity to the disease until after infection takes place. Children under one year of age have a relatively high immunity if their mothers have had measles. Infection is less likely to be transmitted after the rash appears than in the prodromal stage when the disease is not always recognized.

The control of measles is a very difficult problem because of the extreme communicability and the highly contagious prodromal stage of the disease. At the present time we have three weapons of control. They are: isolation and quarantine, general hygienic measures, passive prophylaxis with immune serum, serum globulin, or whole blood.

The value of isolation in preventing spread of the disease is not satisfactory. Chapin

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states that isolation has been a failure in measles. In Aberdeen, Scotland, isolation reduced the measles morbidity rate seven to ten per cent. The value of isolation lies in the prevention of secondary infection in the patient. Most deaths from measles have been shown to be due to pneumonia. This means that the germs must be harbored by the patient or derived from another person with whom contact is made. Whether the secondary infector is present in the patient or not, isolation prevents further contamination. The patient may have some immunity to organisms already present and none to those acquired from outside sources. It can be easily understood that all visitors should be prohibited from entering the room of a person sick with measles. One individual acting as nurse can carry plenty of secondary infection hazard to a patient. Isolation should be absolute. Most hospitals are unable to maintain such strict isolation because of the number of people required to handle such cases. The home is the only practical alternative. Isolation can and should be strictly maintained in the home. One individual who is immune to measles should alone be allowed to enter and leave the sick room. This procedure would cut down to a minimum the possibilities of the patient receiving any infection from extraneous sources. It should be kept in mind that secondary infection is the black sheep that maintains high mortality rates in measles. For this reason it appears that isolation at home with individual nursing care is a wise course, as far as the patient is concerned.

Karelitz and Schick have shown the following to be true after the administration of immune serum: in homes where hygienic measures were poor and where the infected individual was not strictly isolated, repeated contacts of the case were more likely to develop measles than contacts in a clean hygienic home with strict isolation. This is sufficient reason for good hygiene.

Closing schools has little or no effect on the spread of the disease. Terminal fumigation is unnecessary. A general housecleaning suffices. All soiled linens and articles should be disinfected.

The advent during the past few years of immune serum to produce passive immunity

in the exposed is very promising. If absolute protection is to be expected early administration of the serum is necessary. Recognition of the disease before the rash appears is essential for prevention and modification of the infection. Koplik spots are very helpful in early diagnosis.

In the usual course of measles a full dose of immune serum prevents the disease in an exposed person, if administered within five days after the exposure. No active immunity is produced by this procedure. From the fifth to the ninth day after exposure the administration of immune serum will greatly modify the infection, causing a mild case of measles and an active immunity in the infected individual. Immune serum given from the ninth to the thirteenth day will usually prevent the development of severe symptoms. After the disease is fully developed the serum is useless.

It appears that the degree of the disease in an exposed, susceptible person could be controlled by the administering of a full dose of immune serum at a properly chosen time. It is well to remember that a mild case of measles produces an active immunity which is relatively lasting. It is desirable to prevent the disease in children up to two years and possibly to five years of age, since the mortality rate is so high at this early age.

When convalescent serum is not available, pooled blood from healthy adults who have had measles or whole blood from parents may be used just as efficaciously.

In summarizing, the following procedures seem advisable for the best interests of the patient and the susceptible, exposed person: strict isolation of patient at home, quarantine of susceptible contacts, general cleanliness and hygienic measures, individual nursing for the patient, early diagnosis and administration of a full dose of immune serum at a proper time to prevent or modify the disease.

TRENCH MOUTH

JOHN R. DOWNES, M. D.*
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Vincent's angina disease is reportable in only a few states, yet there is a definite evi-

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dence of a widespread increase in its prevalence.

While Vincent's angina is not a disease of recent clinical or bacteriological classification—the bacteriological facts of trench mouth were worked out about the same time as were those of diphtheria, more than fifty years ago—the widespread dissemination of the disease received impetus during the demobilization of the armed forces of the United States, a great many of whom were affected with it, thus carrying the germs to all parts of the country. Another factor in the spread of the disease is increased exposure to the infection through the use of improperly cleaned eating and drinking utensils at hotels, restaurants, and especially roadside stands.

It is not the purpose of this short paper to go into the causative organism, its growth, and resemblance to organisms of other diseases; these facts and differences are well-known to every practitioner. The symptoms, course, and treatment are also well-known to him and need no comment.

The spread of the disease is a matter to which the physician as well as the health officials might to advantage give more careful thought and study, especially when it is known that a blood stream infection by the organism of angina, while rare, is very highly fatal, and is of sufficient frequency to cause all of us to want to do our part to prevent, as far as possible, its spread.

There are ample laws and regulations upon the statute books prohibiting the use of common drinking cups and poorly cleaned eating and drinking vessels; it is not more laws but better co-operation in their enforcement we need. It is embarrassing to have to admit, that due to the improper cleaning of eating and drinking utensils at many of our public places our lips come in contact and our mouths become contaminated with germs from the salivary secretions of the former patron of the roadside stand or restaurant, and if each of us will show an intelligent interest in the cleanliness of our restaurants and fountains by inquiring of the proprietor as to his method of cleaning his dishes, such a campaign on the part of the public, or even by the doctors and nurses of the state, will do

more to stop the spread of trench mouth and other nose and throat infections than all the laws and regulations the Board of Health can institute and carry out. Such safety will be furnished to the public when the public demands it, and the proper display of your interest will help to prevent trench mouth from becoming a menace of major proportions.

MISCELLANEOUS Reliable Apparatus

The DELAWARE STATE MEDICAL JOURNAL has received from the American Medical Association a small pamphlet containing a list of the apparatus accepted by the Council on Physical Therapy, the first one published under the direction and supervision of the Council. In addition to the list and description of accepted apparatus, the pamphlet contains indications for the use of each type and a statement relative to efficacies and dangers.

This pamphlet is a real contribution on the part of the American Medical Association in behalf of rational therapeutics, an effort to help place physical therapy on a sound, scientific basis for the benefit of the medical profession.

One of the purposes of the Council on Physical Therapy is to protect the medical profession, and thereby the public, against inefficient and possibly dangerous apparatus, and against misleading and deceptive advertising in connection with the manufacture and sale of devices for physical therapy.

"Apparatus Accepted" includes all the devices accepted by the Council prior to May, 1935. Any physician can obtain this pamphlet free by writing to the secretary, Council on Physical Therapy, A. M. A., 535 North Dearborn street, Chicago, Illinois.

Social Workers

Professional social workers, no less than tax collectors, have been liberally provided with employment during the past six years. Washington is overrun with short-haired women and long-haired men most of whom have been provided with jobs. These "workers" speak a strange jargon of man-hours, case-loads, indices, and like technological phrases that glorify the occupation. It is rumored with increasing frequency that professional social workers are more concerned with perpetuat-

ing their jobs than they are in seeing any lift in the depression. A commission investigating relief in New York City minced no words in a report last week charging that those who were doling out relief liked the job and didn't like the idea of having it taken away from them. We can understand the aversion of a case-worker to becoming a part of the case-load. The kindly attitude of the administration toward professional social workers has aroused the ire of thinking men and women the country over. The Government, it is said, has a larger responsibility than doling out tax dollars in direct relief and perpetuating a tremendous bureaucracy. While it is recognized that men and women must not starve, it is felt that there is little that the dole-minded relief workers have done other than temporarily ameliorate suffering and spend millions of tax dollars.

The American people, who can't be fooled all of the time, is regarding doled-out relief questioningly. It knows that millions of unemployed and underpaid Americans cannot subsist indefinitely upon public charity, and it is fast coming to the realization that a new economic order is the only alternative to increasing want. When that new economic order comes and the worker can retain all his wages, capital all its interest, and all public service will be paid for by the collection of the rental value of land, there won't be any call for professional social workers and the glib chatter of case-loads and man-hours will be forgotten.—*Labor Herald*, July 20, 1935.

Dr. Sargent Resigns

Dr. C. A. Sargent, who for many years has held the joint position of director of communicable disease control and director of infant and maternal hygiene in the Delaware State Board of Health, will shortly leave to accept an office of equal or greater importance with the New York State Department of Health, it has been announced by Dr. A. C. Jost, executive secretary.

Dr. Sargent first became connected with Delaware public health work when he accepted a position as county health officer in 1926. Later he was given the administration of infant and maternal hygiene, and of communicable disease control. According to Dr. Jost,

much of the credit for the advances made in these two divisions belongs to Dr. Sargent.

There has been a most marked reduction in the infant mortality rate, stated Dr. Jost, and the percentage of children immunized against diphtheria is probably the highest of any State. Careful and thorough studies made by Dr. Sargent, of a number of conditions respecting the communicable diseases, have aided the progress of public health work, not only in Delaware, but elsewhere.

"In accepting the position of epidemiologist with the New York State Department of Health," concluded Dr. Jost, "Dr. Sargent carries with him to the larger field, the heartiest wishes of all his Delaware friends for similar successes in his new position."

Why He Became Deranged

The newly-arrived patient at a mental hospital appeared exceptionally docile and quiet, so much so, that the head of the institution took him aside to ask him if he realized his position.

"My man, do you know where you are?"

"Yes, worse luck, I do; I am in your lunatic asylum for treatment."

"Tell me what happened to you?" asked the doctor.

"Tragic circumstances. I will explain; then perhaps you will understand."

"I married a widow with a grown-up daughter. Two months later my father married the daughter of my wife; consequently my wife became the mother-in-law of her father-in-law. My step-daughter became my step-mother, and my father, from then on, my son-in-law.

"A year later my step-mother had a son, who was my step-brother and the grandchild of my wife; therefore I was the grandfather of my step-brother.

"My wife now had a son who was, naturally, the brother of my father's wife, and therefore, his brother-in-law. My step-daughter is, also, the grandmother of her brother because he is the son of her step-son, as I am the step-father of my father; my son is the step-brother of my father, at the same time

the son of my grandmother, as my wife is the daughter-in-law of her daughter.

"I am the step-father of my step-mother, my father and his wife are my step-children; my father and my son are brothers and brothers-in-law. My wife is my grandmother, for she is the mother of my step-mother, and I am my own grandfather. And that," nodded the patient, "is what brought me here."

The doctor nodded understandingly, and was then taken in, for a few days' treatment, himself.—*The Tatler*.

Corpus Luteum Therapy

George W. Corner, Rochester, N. Y. (JOURNAL, A. M. A., May 25, 1935) is aware that his discussion of corpus luteum therapy cannot immediately result in curative benefit to a single patient, nevertheless he believes that it will be profitable to consider the subject as it stands today, from the mutual standpoint of the practitioner and the investigator. Such consideration will not only explain the physiologic basis on which practical applications are to be worked out but also help, he hopes, to clear away the misconceptions and false hopes by reason of which in the past so many bottles and pill boxes have been filled with elegant but inert pharmaceuticals. Therefore he discusses the function of the corpus luteum, progestin (the hormone of the corpus luteum favoring gestation), relaxin (another substance found in extracts of the corpus luteum, which has the property of relaxing the symphysis pubis in the guinea-pig in a manner similar to the normal relaxation which occurs in that species during pregnancy), the availability of progestin, the clinical possibilities of corpus luteum therapy and its empirical preparations. He concludes that the American practitioner now has at his disposal no corpus luteum therapy that has passed the test of experiment, but current work with progestin promises to give in the future a corpus luteum hormone with which the possibilities of therapy may be explored.

Retroposition of the Transverse Colon

P. E. Truesdale, Fall River, Mass. (*Journal A. M. A.*, May 11, 1935), states that an abnormal position of the intestinal tract is the result of some disturbance of migration, rotation, descent or fixation during embryonic life. Perhaps the rarest of all developmental anomalies of the colon is retroposition of the transverse colon due to inverted rotation of the midgut during the tenth week of embryonic life. In the few cases assembled from the literature the transverse colon dips back into a tunnel behind the duodenum and superior mesenteric artery. Some constriction through torsion of the mesentery or pressure on the transverse colon then causes intestinal obstruction. The cecum and ascending colon become markedly dilated, and in some cases complicated by common mesentery the ileum is also strangulated in folds of mesentery. In the two cases cited, death was caused by cancer and tuberculosis, retroposition of the colon was discovered at necropsy. These cases of retroposition of the transverse colon are to be differentiated from cases of torsion on the peduncle of mesentery with ensuing volvulus of a segment of large intestine or, in rare instances, of the entire small intestine as well. Volvulus occurs after development is complete, as a result of torsion of the mesentery. The intestine can be restored to its normal position through detorsion anticlockwise. Several cases of volvulus result in a position of colon and small intestine almost identical with those of true retroposition. Some cases are hard to diagnose. It is apparent from end results that, when acute intestinal obstruction occurs, surgical intervention is impressive. The patient's condition, however, contraindicates radical measures, such as an anastomosis or resection, until the patient has recovered from the acute obstruction. Preliminary cecostomy can be done with less risk, and after normal evacuation of the intestine has been established further surgical measures may be undertaken to relieve constriction and correct torsion of the intestine or mesentery. In all cases treated by radical operation the prognosis is discouraging.



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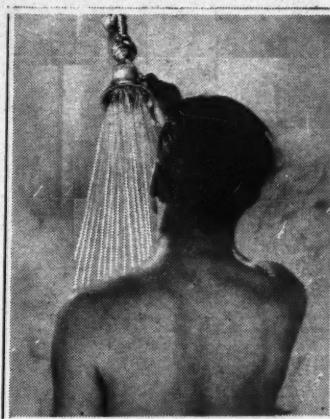
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